

# Conservation and Management of Coastal Resources as a Potential Adaptation Strategy For Sea Level Rise



The project of Mangrove Afforestation is implemented in Krishna Mangrove Wetlands area of Andhra Pradesh, to overcome the consequences of salinization and seawater inundation due to effects of climate change, cyclonic storms, and storm surges. The project is executed by M. S. Swaminathan Research Foundation (MSSRF) with support from the Praja Pragathi Seva Sangam (PPSS), an NGO for integration of mangrove plantation and fishery. The model of integration of mangroves with fisheries called Integrated Mangrove Fishery Farming System (IMFFS) will be implemented for 600 families owning agriculture land and aquaculture ponds. The project would treat 200 ha of degraded mangroves benefiting 200 people related to the aspects of mangrove restoration, IMFFS, and aquaculture training, and also specific training for 50 people on IMFFS.

## PROJECT RATIONALE

About 4.5 million people living in Krishna river delta are dependent on agriculture, fisheries, and aquaculture. The delta supports irrigation in about 5, 40,000 ha area and has mangrove forest cover in about 22,000 ha area. The delta's natural resource includes 3,000 ha of unprotected forest area which is increasingly facing threat of degradation and has been affecting the socio-economic activities in the peripheral villages. It has been predicted that increase in sea level rise by about 0.6 m would affect 894 km<sup>2</sup> area in the Krishna and Godavari delta region and would lead to displacement of 1.29 million people.

## PROJECT FACTS

Adaptation Fund Support	USD 0.68 Million INR 41.35 Million
No. of Participants/ Beneficiaries	Direct Beneficiaries: 775 Indirect Beneficiaries: 4,375
Project Duration	June 2015- June 2018

## Project Approach

Restoration of the degraded mangroves is done in the degraded, saline, and unprotected mangrove areas located in Revenue Department land. Nursery raised mangrove saplings will be planted 2 m apart along the canals at about 20 cm down the slope. Planting of mangrove saplings will be taken up in 100 ha each in year I and year II. The members of VLI, particularly willing landless people and women, will be employed in all these works. *Avicennia marina* and *Avicennia officinalis* will be planted more in the restored area as they tolerate wide range of salinity and other restoration conditions. To maintain diversity *Avicennia alba*, *Rhizophora apiculata*, *Rhizophora mucronata*, *Bruguiera gymnorrhiza*, *Excoecaria agallocha* and *Ceriops tagal* will be raised in the mangrove nursery and used for planting.

The aquaculture ponds are modified in such a way to provide about 40% of the area for raising mangrove plantation and 60% of the water area for fish cultivation. The adaptation strategies include restoration of mangroves and demonstration of Integrated Mangrove Fishery Farming System (IMFFS). The native multiple mangrove species are grown to avoid ingress of sea water, coastline stabilization, and livelihood protection. Demonstration of IMMFS would be done in the lands owned by small aqua farmers and model would be showcased to sustain income from the fish farming. Village Level Institution (VLI) is established at the village / hamlet level to plan, implement, and monitor project activities. Two models of IMFFS would be demonstrated with active participation of local community and stakeholders. The cage and pen culture for crabs, fish, clams and cockles would be established.

### Likely Impact of the Project

- Restoration of degraded mangroves in 200 ha along the Krishna estuary.
- Orientation of 1,500 people on climate change, training of 200 people on mangrove restoration and training of 50 farmers including at least 20 women in IMFFS.
- Establishment of mangrove nursery in 3 villages for ensuring supply of mangrove seedlings.
- Demonstration of two models of IMFFS with participation of local community members and other stakeholders.



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